

THE PORTAGE FIRE DEPARTMENT



FIRE-BASED AMBULANCE SERVICE FEASIBILITY STUDY 2023

Executive Summary

Having the ability to provide prehospital medical care and transport critically ill or injured patients at the most optimum time in the call, will yield the most benefit to the citizens. When looking at an efficient and effective deployment model, this may be the single most important factor when choosing a system. The goal should be to create a system that enhances the level of service with a more efficient deployment model without increasing costs to the local taxpayer. To determine the best model for providing an emergency ambulance service, the Fire Department, as well as the city, must first determine objectives or reasons why they are looking to provide the service. Currently, the City of Portage, the Towns of Caledonia, Lewiston and Pacific are provided with an EMS system that involves Aspirus MedEvac providing patient care and transport service. Assistance is provided from the Portage Fire and Police Departments on pulseless non-breathers and lift assists. The purpose of this research was to perform a comprehensive, data-based study on the feasibility of the Portage Fire Department (PFD) providing ambulance care and transport services to the City and surrounding Townships.

The scope of work was to determine the most viable option for providing patient care to the citizens of the city and towns. To distinguish an improved level of care and service, there must be quality control measures that can be evaluated for comparison. Integrating a streamlined ALS transport into the fire department organization will provide for better patient outcomes and optimize patient care. To achieve a comprehensive EMS delivery system, it is necessary to develop a cost recovery plan for services provided that is reflective of City ideals. The key objectives identified were the following:

1. Optimize patient care.
2. Efficient/Effective Deployment model
3. Cost Recovery
4. Establish Standard of Care.

Patient care is optimized through comprehensive coverage, quality care, continuity, and timely transport. Within the proposed deployment model, the PFD will provide three (3) ambulances for emergency transport services. Using our fire response times for the past 7 years and the NFPA requirement for turnout time the fire department could arrive on scene in less than 4.5 minutes from time of the alarm. Based on NFPA 1710 the turnout time for Emergency Medical Services (EMS) shall be within 60 seconds from the time of the alarm. The average travel time (TT) in the City of Portage was three (3) minutes and 13 seconds. The average travel time for the townships was 7 minutes and 34 seconds. Of course, these times vary based on the travel time to the location of the incident. These time frames used in the EMS setting will result in the optimization of patient care.

This deployment model also includes a public-private partnership between the Fire Department and either the current ambulance provider or a private ambulance provider. The third-party organization may add supplemental ambulances to the system, but for sure will provide long distance transfers. Positives to this system include:

1. An overall increase in the number of ambulances available compared to the number of ambulances currently provided.
2. An increase in the number of apparatus the PFD has to provide lifesaving care.
3. An increase and optimization in the level of service to those who are critically injured or sick by placing a Paramedic on scene more rapidly, while at the same time creating a cost recovery model that is economically sustainable.
4. An increase in personnel to provide fire and rescue services to the City and townships.

This also allows the City to quickly evolve or alter their deployment and EMS delivery methods as the healthcare industry changes. Private or external ambulance services that transport generally have very aggressive collection policies while municipal-owned services have a much less aggressive policy. Softer collection policies are established to reduce cost to the local taxpayer because profit is not the primary consideration. Any cost recovered or generated revenue is returned into the system to allow for the enhancement of city services. This return provides a significant added value to the taxpayer. As a participant in the EMS system, a provider can have input into making the system better, but unless the participant is also the ambulance transport provider, they have limited ability to change the system. A fire-based ambulance transport will allow for Portage to establish the standard of care for its citizens. Engagement through direct management of the system allows the City the best possibility to be proactive as the system changes. The feasibility study included data collection and analysis through multiple methods, both qualitative and quantitative. Collection and analysis were performed through the following:

1. Historical data collection
2. Fire-based EMS transport survey implementation
3. Referenced third-party feasibility studies.
4. Literature review
5. Referenced State and National standards.
6. Payer mix analysis.
7. Cost recovery modeling, including ambulance service fee review.
8. GIS standard of coverage and deployment mapping
9. Return on investment analysis.

The results of this feasibility study have identified several recommendations that the Portage Fire Department and the City of Portage should utilize to enhance patient care within the community. The recommendations are as follows:

1. The PFD should provide the ambulance transport service within Portage and the surrounding townships.
2. The PFD ambulance transport service should utilize a billing system that is user friendly.
3. The PFD should provide a low-cost fee per person.
4. The PFD should use a third-party billing agency that charges a percentage based on the net collection of invoices.
5. The PFD and City of Portage should establish relationships with area hospitals and clinics, educational institutions, surrounding EMS services and the Wisconsin Department of Health Services to ensure an effective and efficient EMS service for the community.
6. The PFD should continue to analyze data, look for trends, and identify ways to continually improve services.

In the mission statement of the Portage Fire Department (committed to providing the highest quality of public safety for the community) the core pledge is to provide the highest level of customer service and satisfaction in a professional and caring manner. The City of Portage is positioned to choose between the status quo or changing the EMS delivery model, to provide flexibility and optimization of patient care in the community. Cost effective and efficient delivery of services that fall under local direction, will be realized, if the City capitalizes on the opportunity presented to them. Not only does the study show that it is feasible, but the data also confirms the need for the City to provide ambulance transport services to enhance the quality of life within Portage. Data also indicates that a positive cost recovery for services provided does indeed exist, allowing for sustainable economic growth.

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Introduction

In February of 2023, it was requested that the Portage Fire Department perform an ambulance feasibility study. Having the ability to provide prehospital medical care and transport critically ill or injured patients at the most optimum time in the call, will yield the most benefit to the citizens. When looking at an efficient and effective deployment model, this may be the single most important factor when choosing a system. The goal should be to create a system that enhances the level of service with a more efficient deployment model without increasing costs to the local taxpayer. In order to determine the best model for providing an emergency ambulance service, the Fire Department, as well as the City, must first determine objectives or reasons why they are looking to provide the service.

Of the 200 most populated communities in the United States, 97 percent have the fire service delivering pre-hospital emergency medical service response (International Association of Fire Chiefs, 2019). Currently, the City of Portage is provided with an EMS system that involves Aspirus MedEvac as the ambulance transport service, supplemented by a Portage Fire and Police Department response. The purpose of this research was to perform a comprehensive, data-based study on the feasibility of the Portage Fire Department providing ambulance transport services. The scope of work was to determine the most viable option for providing patient care to the citizens of Portage, the Towns of Caledonia, Fort Winnebago, Lewiston and Pacific. To provide ambulance services, the City has several options. A financial breakdown will be provided to the City which will include: startup cost, yearly cost, revenue potential, and cost recovery to be realized. With information provided in the report, the PFD will make recommendations to the City Officials for consideration based not only on data, but what is in the best interests of the citizens of the City of Portage.

Criteria

When determining whether or not to provide ambulance services, the most difficult aspect is determining what criteria to use. For the Private Sector, the decision is relatively simple; the goal is to provide the best patient care possible at the lowest cost to extract the maximum amount of profit. Or, at the very least, maintain a profit margin that sustains the operation. This is not necessarily aligned with a city fire-based provider. In order to determine the best model for providing emergency ambulance service, the Fire Department, as well as the City, must first determine objectives or reasons why they are looking to provide the service. Some reasons include expansion of services already provided, enhancing the level of patient care, maximizing quality of life, and creating stability in the system. It is important to note that the determination of success may not be decided by the revenue received but by whether the objective(s) are met. If the objectives are to deliver a better level of patient care, shorter response times, and

optimal resource utilization. Then the new deployment model meets or exceeds the objectives, the program should be considered a success regardless of cost.

Although financial impact is not the only measure of success in today's fire-based EMS service, the rising cost of providing the service, combined with possible revenue generation, must be considered. The service delivered is directly related to what the citizens, City Council, and the mayor are willing to fund. While financial impact is a major consideration, the level of success should be evaluated by how close the result is to meeting the needs and goals.

Current Structure

Currently, the City of Portage is provided with an EMS system that involves Aspirus MedEvac ambulance transport service that is augmented by a Portage Fire and Police Department response. Established National Standards that should be expected within communities is that a Basic Life Support (BLS) unit should have a response time of four minutes or less, 90% of the time. Advance Life Support (ALS) units should have a response time of eight minutes or less, 90% of the time (National Fire Protection Agency, 2019). The strategic placement of the fire station allows the fire department to meet these benchmarks. The Portage Fire Department (PFD) will require that all personnel have an Emergency Medical Technician or Paramedic Emergency Medical Technician license for employment. PFD also staffs the fire department with an engineer augmented by other fulltime staff and paid-on-call 24 hours a day, 365 days a year.

Determination of Objectives

Before feasibility can be determined, it is imperative to establish objectives for the ambulance study. The key objectives identified are the following:

1. Optimize patient care.
2. Efficient/Effective Deployment model
3. Cost Recovery
4. Establishing the Standard of Care within Portage and the surrounding townships.

With the objectives identified by the Portage Fire Department, it is important to break down each objective and analyze them individually. These objectives are the foundation for determining whether a city-based ambulance delivery model would in fact be feasible and meet the needs of the City and its citizens.

Optimizing Patient Care

The licensing of paramedics and certifications of EMT's is uniform across the state. All EMTs and Paramedics must meet the same requirements and have the same basic scope of practice

within their licensure. The scope-of-practice identifies the skills, equipment, and medications approved for use at each identified level of Emergency Medical Services (EMS) licensure or certification in Wisconsin. The scope of practice is a description of what a licensed provider or individual legally can, and cannot, do. (Department of Health, Wisconsin EMS Scope of Practice, March 2022)

One benefit that a city-based ambulance transport service provides is that fire department members have a greater vested organizational commitment and stake in the community they serve versus a private or external ambulance service. Careers in the fire service are measured by decades while private ambulance services are measured in years (A.P. Triton LLC, 2015). This long-term team approach develops institutional knowledge and culture. This also creates consistency, cohesion, and commitment to a community, which directly impacts patient care and outcome.

To distinguish a higher or improved level of care and service, there must be quality control measures that can be evaluated for comparison. Things that could be measured include documentation, surveys, time on scene, Return of Spontaneous Circulation (ROSC), and any combination of other factors. Integrating a streamlined ALS transport into the fire department organization will provide for better patient outcomes and optimize patient care. Better patient outcomes are a measurable result when patients in critical condition are cared for and transported to the appropriate facility as expeditiously as possible (A.P. Triton LLC, 2015).

Efficient/Effective Deployment Model

There are several options that exist for the city to provide ambulance transport. The city could choose to keep the current model, elect to use a private service to provide all emergency and non-emergency ambulance transports, or a hybrid system that uses the fire department for emergency ambulance transport along with a third-party system to provide long-distance transfers for the city. Any plan chosen must be fiscally sound in both the short and long term and be sustainable. The model selected should ensure that units are logistically placed to reduce response time as well as use resources as efficiently as possible. Having the ability to transport critically ill or injured patients at the most optimum time in the call can yield the most benefit to that patient. When looking at an efficient and effective deployment model, this may be the single most important factor when choosing a system.

Cost Recovery

To achieve a comprehensive EMS delivery system, it is necessary to develop a cost recovery plan for services provided. If the City chooses to implement an EMS system, a cost recovery plan for providing services can be developed that is reflective of City ideals. The goal would be to create a system that enhances the level of service with a more efficient deployment model

without increasing cost to the local taxpayer. With the City assuming full responsibility both financially and operationally for emergency medical services, it ensures that a system supported by a fee structure that creates stability combined with reducing cost to the city taxpayer, is developed.

With cost recovery in the EMS system, there are a number of variables that can be applied when analyzing revenue generation. Private ambulance services are typically in an urban area because there is profit to be made. If there was no cost recovery in the system, there would be no competing providers. Since each agency operates uniquely, the amount of cost recovery varies among providers. The largest cost is the cost of personnel and unit hours. One of the unique positions that a city-based transport system has, is the ability to apply any revenue collected over the cost of the transport component back into the EMS system or other city services. Another important aspect of cost recovery is providing stability within the service area. A fire-based ambulance transport services offers a predictable cost recovery. It also has the ability to augment a city's yearly operating budget by adding revenue back to the city funds, therein providing a return on investment.

Establishing Standard of Care

As a participant in the EMS system, a provider can have input into making the system better, but unless the participant is also the ambulance transport provider, they have little ability to change the system. Universally, the healthcare system is on the edge of seeing significant changes in the delivery of EMS. Engagement through direct management of the system allows the city the best possibility to be proactive as the system changes (A.P. Triton LLC, 2015). Only as the primary provider of the transport component can PFD have the ability to ensure vital changes take place in a proactive manner. As the transport provider, the PFD will establish and retain administrative and operational aspects of patient care. This includes the call for service, patient contact, transport, and transfer of care to the hospital staff. These areas can be used as trigger points in the system to alert staff that a modification in the system needs to be evaluated as part of a quality control management process. Establishing the Standard of Care is truly the only way to care for our neighbors.

Determining the Value of the System when analyzing the value of the system, there are several factors that affect the EMS system and its ability to recover costs including: billing policy, collection policy, transport rates, and documentation.

Billing Policy

To get the most reasonable cost recovery from the system, it is essential to establish a billing policy. There are several different ways that billing can occur. Some EMS transport services charge a baseline fee and then add additional costs based on each additional item used or skill

performed (e.g. blood draw, intravenous access, 3-lead or 12-lead EKG). This complicates billing and creates difficulty when trying to predict cost recovery. Other services charge a fixed rate for the service. This creates a cap on maximum potential collections available but can offer more predictable cost recovery. According to Wisconsin Department of Health Services (DHS), an ambulance service is allowed to set rates, fees, charges, and any other assessments considered proper to provide for health, safety, and welfare of citizens for an EMS transport system. DHS regulates ambulance reimbursements for programs such as Medicaid and Medical Assistance.

All EMS transport systems will fluctuate based on call volume but are somewhat predictable based on demographics, past call history, and seasons of the year. Historically, it is reasonable to expect a 3% increase in calls for service annually. This equates to an increase of approximately 80 calls for service each year. This provides some predictability based on relative and historical data.

There are also different billing models that exist for EMS transport. Private ambulance transport companies usually have an in-house billing system. Some municipal and county-based EMS transport services also have their own billing system internally. Other services use third party contracted billing agencies. These agencies charge a percentage of total calls, a flat fee per call, or a hybrid system that is typically less costly. They comply with the wishes of the organization on billing and collection policies. A third-party billing agency can adjust to being aggressive or very lenient based on the desires of the organization. Either model allows for the city to control the billing and collection philosophy.

Collection Policy

The collection policy is one of the most important and a politically sensitive aspects of the process affecting cost recovery. Federal regulations that control billing require that every patient receive a bill for services rendered to prevent what is known as “cherry picking” where only specific groups of patients are billed. How aggressive a company is with collection of bills is a matter of business philosophy (A.P. Triton LLC, 2015). Private or external ambulance services that transport generally have very aggressive collection policies. Sending a patient to collections or placing them in a strenuous payment plan is not only common practice, but standard operating procedure. Municipal-owned ambulance services may have a much less aggressive policy. While private ambulance services are in the business of generating profit, municipal-owned services must balance political considerations and public relations for the simple fact that most patients will also be residents and taxpayers of the community. Local governments that provide transport services are placed in a superior position for several reasons. First, softer collection policies are established to reduce costs to the local taxpayer because profit is not the primary consideration. Secondly, any cost recovered or revenue generated is returned to the system to allow for the enhancement of city services or funding additional services to the

citizens. Finally, this return to the system provides a significant added value to the taxpayer. With an external service providing the transport, the money spent by the taxpayer leaves the community, funds other operation areas outside the city, and adds to the profit margin of the company. Documentation provided by the Paramedic on a Patient Care Report (PCR) plays a significant role in collection rates as well. Using state of the art reporting and maintaining compliance are paramount. Currently PFD uses a well-recognized reporting software which provides a patient care report format from a reputable organization.

Transport Rates

Transport rate is defined as the percentage of total calls that result in the ambulance transportation of the patient to the hospital. Based on historical data, a 70% transport rate is expected for the City of Portage and the surrounding townships. Another component of the transport rate is the patient loaded per mileage fee. Ambulance services also generally charge anywhere from \$10-\$20/per patient loaded mile. A percentage of calls do not require immediate transport. These calls are often labeled as “treatment and non-transport”. Ambulance services frequently establish rates for calls that do not warrant transportation. Often times, the fee charged does not cover the service provided. The intent of these fees is to protect the service against the abuse of the system. This includes call types such as a lift assist at a nursing home in which the staff are advised to call the fire department in event of a fall patient and does not warrant transport to a hospital. This is a practice by nursing homes in this area. Another fee often established, would be a standby fee for an ambulance to stage on scene during an event (e.g. sporting event, graduation, concert, etc.)

Payor Mix

When billing for services, healthcare systems (clinics, hospitals, EMS systems) analyze four categories of payers that are referred to as the payor mix. They consist of Medicaid, Medicare, private pay (uninsured), and Commercial Insurance. Subcategories exist in the groups that are covered under workers compensation and medical coverage under an auto policy. Demographics of the payer mix are different based on geographical location. Areas that see a high percentage of working age adults and businesses will have a higher percentage rate of commercial insurance. Areas that have a larger population of seniors will have a higher rate of Medicare coverage.

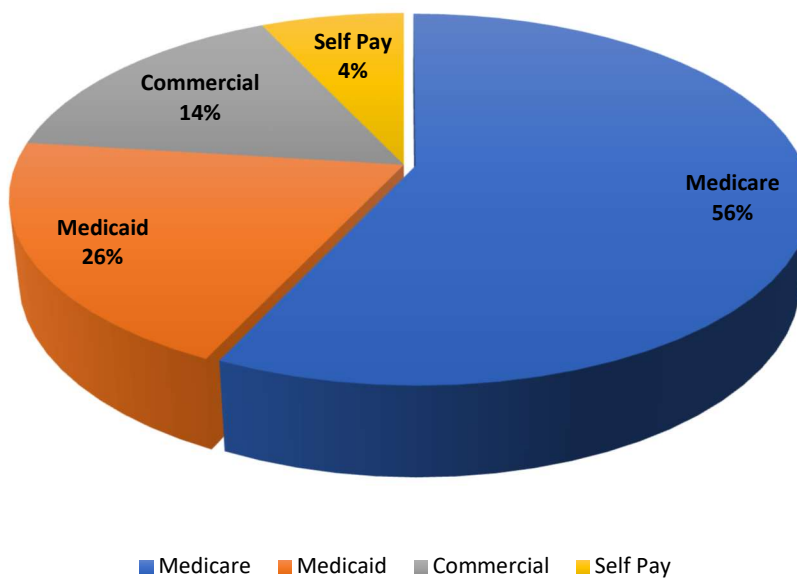
Nationwide, the labor force is 62.9% (U.S. Bureau of Labor Statistics). Senior citizens, age 65 or older, account for 17% of the population. Wisconsin sees a labor force of 58% and 18% at senior citizen status (Wisconsin Department of Administration). Although these facts differ with each county, city and town, this provides a general breakdown of the demographics. One of the more important things to note is that the Baby Boomer Generation makes up 25% of the population in the United States, accounting for 72 million people. Currently they are impacting

the healthcare system in a manner that will create a strain on EMS services nationwide, requiring more resources than currently provided.

While data may show that senior citizens are only a small percentage of the total population in Portage, they represent a larger portion of calls. The use of medical services increases with age and results in higher usage of the EMS system compared to those of commercial insurance. So, while the payor mix may show where the individuals are categorized, it does not show who is using emergency services. The best data to analyze is derived from previous calls and historical trends of those transported within a given area. The data used to analyze the actual transport payor mix was collected from Aspirus MedEvac, Baraboo, Wisconsin Dells, Lake Delton, and another unnamed private service.

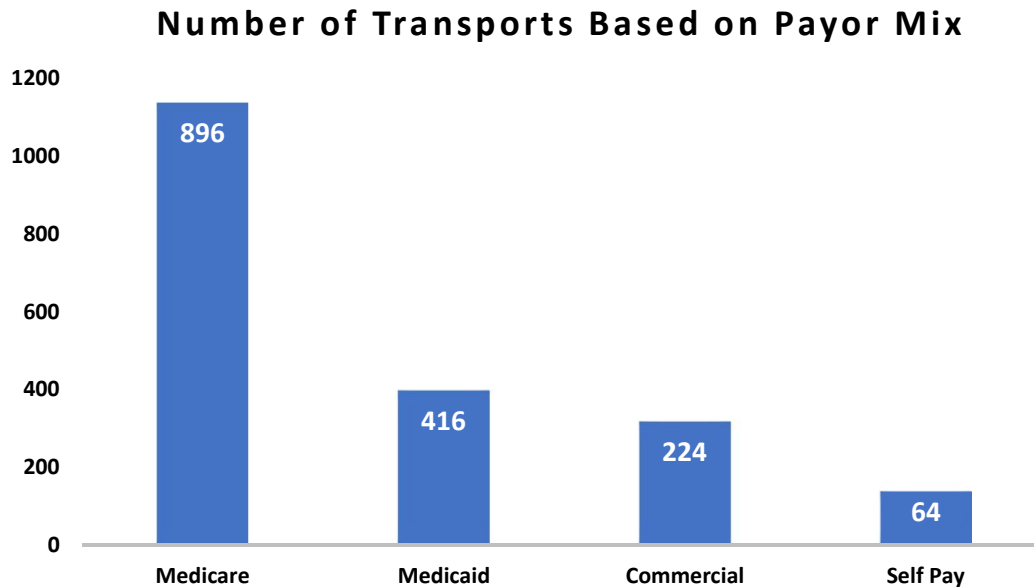
Figure 1: Expected Payor Mix for Portage and Surrounding Townships

Local & Surrounding Community Payor Mix



Data shows that while those with Medicaid in Wisconsin made up 16% of the population, they accounted for approximately 26% of the payer mix using the EMS ambulance transport system. Run call estimates in the City of Portage for emergencies not including transfers are expected to be around 2000 calls. The Townships will account for approximately another 400 calls. Approximately 70% of total medical emergency calls within the City of Portage are expected to be ambulance transports. Based on the Payor Mix from Figure 1, transports were calculated at 1996. The breakdown for payer mix categories is represented in Figure 2.

Figure 2: Number of Transports Based on Payor Mix



Now that a number of transports based on payor mix is established, an estimate of the value of the system can now be determined. A survey of several other fire-based EMS services in the Portage area was implemented. The results of the survey can be found in Appendix A. As discussed earlier, ambulance transport services can either have a base fee and charge for each additional item (line-item billing) or flat fee billing. Flat fee billing was chosen for lack of complexity, simplified billing, and clarification for the user. Additionally, while it does put a cap on the maximum amount of cost recovered, it provides a more predictable measurement of cost recovery. Based on the survey and data results, the flat fee averages were between \$1,600 and \$2,000, resident and nonresident respectively. The estimated mileage charge was \$20 - \$28 per mile.

It is important to note that not every call will produce between \$1600 and \$2,000. Allowable rates for Medicare and Medicaid are much lower on both ambulance transport fee and allowable mileage fees. On average, \$529.87 for a Medicare transport with mileage at \$8.71 per mile are seen. With Medicaid, the average return is around \$347.55 (2022) for transport and mileage at \$5.97 (2022) per mile.

To be conservative, the payor mix return of billing was calculated at 50% for overall recovery. Nationwide, a 50% collection rate is the average (Reed, 2019). The private-pay (uninsured) category will likely yield poor return. This is where an aggressive billing company can pursue those individuals to seek payment. Figure 3 shows the results of calculations based on data from area services collection rates.

A new program, Ground Emergency Medical Transportation (GEMT) Uncompensated Cost Reimbursement is in the process of being implemented by the State Government and will provide us with additional revenue. Municipal providers (Fire Departments and Fire Districts) would complete transports and continue to bill as normal. Depending on the timeframe laid out by the program (TBD), they would complete a Certified Public Expenditure report annually. This report will have the PFD itemize all their costs over the past year. Once we have a total cost for the year we will divide that by the total transports run, giving them an average cost per transport. The PFD would then determine how many Medicaid transports were provided in the year and what the total reimbursement received from those transports (This will be provided by the billing company both on monthly reports and at the time of completing the CPE). The difference between our costs to run the Medicaid transports (number of Medicaid transports times the average cost per transport) minus revenue already received from regular Medicaid payments equals the costs to be matched by the GEMT program). These costs are then matched by the Federal Medical Assistance Match for Wisconsin (currently around 60%). That matched amount is then paid out to each department. This program is still being developed, so the reimbursement is an estimate based on known information. The PFD would potentially be reimbursed approximately \$60,000.

Figure 3: Gross Revenue Billing for Cost Recovery

Payor Mix	% Of Calls	# Of Calls	Average Collected per Trip	Total Annual Revenue
Medicare	56%	896	\$529.87	\$474,763.52
Medicaid	26%	416	\$347.55	\$144,580.80
Commercial	14%	224	\$1,732.73	\$388,131.52
Self-Pay	4%	64	183.36	\$11,735.04
Total	100%	1996		\$1,019,210.88
<p>* Call numbers based on industry trend of 80% billable calls of total call volume provided by Aspirus **Call type percentages are based on Aspirus data and Baraboo FDP for similar proximity to hospitals / area trends ***Average collected per trip based on rates charged and payor mix of Aspirus data with ALS vs BLS ratio of 70/30 ****Revenue projection is based on rates: Non-Residents \$2000, Residents \$1600, Mileage \$28</p>				

With a clear estimate of the value of the system for the City of Portage, it is now possible to determine the feasibility of the Portage Fire Department providing ambulance transport services. With run numbers based on statistical predictors, the billing and collection model is conservative. This system also does not account for a supplemental insurance of any kind. To accurately determine feasibility, it is important to analyze a deployment model, develop costs based on the model chosen, and then perform a cost benefit analysis.

Deployment Model

The best-fit deployment model was determined based on efficiency, considering logistics and existing structure, as well as being the most effective. In other words, providing the best services within an acceptable cost range. Within the deployment model, the Portage Fire Department will provide ambulance transport for 911 calls. This model utilizes three (3) 24-hour ambulances. The national standard (NFPA 1710) establishes that an ALS (Paramedic) unit should arrive within an 8-minute response time on 90% of the incidents (National Fire Protection Agency, 2019). The PFD coverage and response will not always exceed the national standard when responding into the Townships due to the travel time. However, in the city the PFD will consistently match or exceed the national standard. (Appendix B – Projected PFD Response). This appendix reflects 4-minute, 8-minute, and PFD fire and EMS coverage maps. Currently, the average City response times (time department is notified to time department is on scene) for fire response is approximately 4 minutes 18 seconds. The average travel time (TT) for PFD units is two (2) minutes and 57 seconds.

Fire, rescue, and EMS incidents, and the fire department's ability to respond to, manage, and mitigate them effectively, efficiently, and safely, are mission-critical components of the emergency services delivery system. In fact, fire, rescue, and special operations provide the primary, and certainly most important, basis for the very existence of the fire department.

Nationwide, fire departments that provide EMS first response are responding to more EMS calls and fewer fire calls, particularly fire calls that result in active firefighting operations by responders. This is well documented in both national statistical data, as well as in the Center for Public Safety Management (CPSM) fire studies. Nationally, improved building construction, code enforcement, automatic sprinkler systems, and aggressive public education programs have contributed to a decrease in serious fires and, more importantly, fire deaths among civilians.

These trends and improvements in the overall fire protection system notwithstanding, fires still do occur, and the largest percentage of those occur in residential occupancies, where they place the civilian population at risk. Although they occur with less frequency than they did several decades ago, when they occur today, they grow much quicker and burn more intensely than they did in the past due to building construction features, more flammable interior finishes, and more flammable furniture.

The following information provides the requirements and standards in regards to firefighting tactics and how important it is to be able to utilize EMS personnel in a dual role. To ensure civilian and firefighter safety, fireground tasks must be coordinated and performed in rapid sequence. Assembling an Effective Response Force (ERF) is essential to accomplish on-scene goals and objectives safely and efficiently. Without adequate resources to control the fire a

structure and its contents continue to burn. This increases the likelihood of a sudden change in fire conditions, the potential for failure of structural components leading to collapse, and limits firefighters' ability to successfully perform a search and potential rescue of any occupants.

Critical tasking for fire operations is the minimum number of personnel (firefighters/paramedics) needed to perform the tasks required to effectively control and mitigate a fire or other emergency. To be effective, critical tasking must assign enough personnel so that all identified functions can be performed simultaneously. Thus, while an incident may end up requiring a greater commitment of resources or a specialized response, a properly executed critical tasking assignment will provide adequate resources to immediately begin bringing the incident under control.

NFPA 1720, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments outlines organization and deployment of operations by volunteer and combination fire and EMS organizations. It serves as a benchmark to measure staffing and deployment of resources to certain structures and emergencies.

It is understood that volunteer and paid-per-call members typically respond to incidents from home or work, so for a minimum-level Effective Response Force to begin fire suppression efforts, NFPA 1720 establishes the minimum response staffing for this type of department. The PFD is considered by this standard an NFPA 1720 department.

Another consideration, and one that links to critical tasking and assembling an Effective Response Force, is that of two-in/two-out rule enforced by the Wisconsin Department of Safety and Professional Services SPS 330. Essentially, prior to initiating any fire attack in an immediately dangerous to life and health (IDLH) environment (and with no confirmed rescue in progress), the initial two-person entry team shall ensure that there are sufficient resources on scene to establish a two-person initial rapid intervention team (RIT) located outside of the building.

The PFD must utilize two firefighters to commit to interior fire attack while two firefighters remain out of the hazardous area or immediately dangerous to life and health (IDLH) area to form the RIT, while attack lines are charged, and a continuous water supply is established.

In the end, the ability to assemble adequate personnel, along with appropriate apparatus to the scene of a structure fire, is critical to operational success and firefighter safety. The variables of how and where personnel and companies are located, and how quickly they can arrive on scene, play major roles in controlling and mitigating emergencies. Monday through Friday, the PFD typically has three staff members on duty to respond to calls for service, which include the Fire Chief, Inspector-Engineer, and an Engineer. PFD relies heavily on paid-on-call volunteer

members' response from home or work to make up the teams and crews of the Effective Response Force.

The PFD currently has twenty-one paid-on call line personnel assigned to three companies. There is various apparatus assigned to each company to include engines (pumpers), water tenders, a heavy rescue, and an aerial ladder platform.

The investment in personnel to establish an EMS system will also impact our Effective Response Force. Fire based EMS is the most efficient and effective way to provide fire and EMS services. The PFD will cross train its personnel, so they are able to respond to fire and EMS calls when the need arises. This deployment model will provide up to nine personnel on duty Monday through Friday to respond to calls for service, which include the Fire Chief, Assistant Chief of EMS, Inspector-Engineer, Engineer and five EMS personnel. Of course, the EMS personnel will be required to respond to emergency medical calls when requested but will be able to augment the fire response. Not only will we have additional staff on duty but will also have more off duty resources to be recalled when needed.

This deployment model also includes either the current ambulance provider or a private ambulance service to add supplemental ambulances to the system to provide for back up on emergency calls as well as provide long distance transfers.

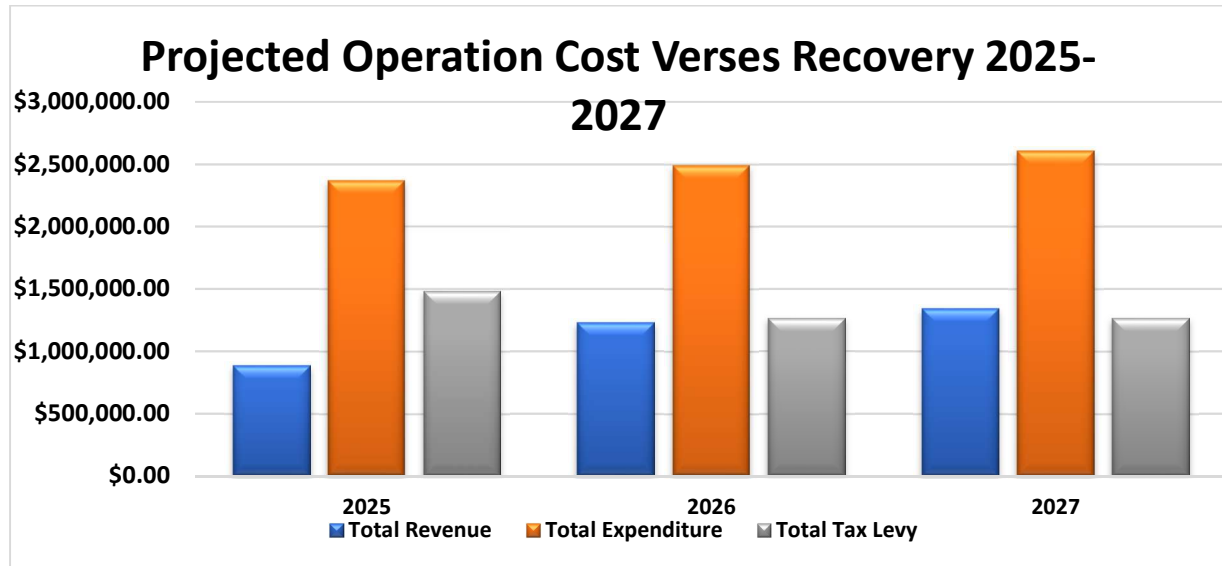
Using this deployment model, costs can then be calculated. To estimate future costs, a 3-year projection with a 3% increase in operations and maintenance each year for each separate expense has been shown (Appendix C).

While cost recovery was figured conservatively, expenses were calculated at a higher-than-expected cost to ensure that the model is sustainable. The cost recovery model utilized average revenue per trip collected compared to other area ambulance services.

With the current ambulance system, service fee revenues do not remain within the city and therefore cannot be used to reduce the cost of services, providing no return on investment to taxpayers.

Figure 4 shows a yearly operating cost or expenditure, net revenue, and the total tax levy.

Figure 4: Operational Cost verses Recovery



The positive aspects seen with this deployment model:

1. Most importantly, this deployment model will enhance the level of prehospital critical care and survivability by providing increased Paramedic coverage and reduced response times (Appendix C).
2. An overall increase in the number of ambulances available daily compared to the number of ambulances currently provided, enhances the level of service.
3. An Increase in the number of resources the PFD has to provide lifesaving care.
4. Provides for the expected number of units needed in the system to handle peak load demand during a 24-hour operational period.
5. No new facilities will be needed to operate ambulances at the proposed deployment level. The PFD will have to store the Hazardous Material Response trailer and hovercraft at the fairgrounds to accommodate the ambulances.
6. Meets all objectives determined by the PFD and places the City of Portage in a position to effectively manage all aspects of the emergency response including continuity of care for the most critical patients of the emergency ambulance transport system.
7. Allows the City to easily expand services based on the needs of the citizens, as the City grows and new infrastructure is built.
8. Allows for further development of a cost recovery model that allows the City to rapidly evolve as the healthcare industry changes.
9. Allows for the most flexibility in the billing and collection process that can benefit both the City and its citizens.
10. Provides for sustainable cost recovery to offset expenditures.

11. Significant return on investment for the local taxpayer with any revenue generated recompensed back into the system.
12. Any additional staffing boosts Insurance Services Office (ISO) points while providing added value to the taxpayer.
13. Provides additional firefighters to augment the diminishing Paid-On-Call ranks.

The negative aspects seen with this deployment model:

1. Political concerns and the resistance to change from the system currently in place.
2. The upfront expenditures needed to start the PFD fire-based ambulance service.

Recommendations

The results of this fire-based ambulance feasibility study have identified several recommendations.

1. The PFD should provide a fire-based ambulance transport service within Portage and the surrounding Townships.
2. The PFD ambulance transport service should utilize a flat fee billing system that is user friendly.
3. The PFD should use a third-party billing agency that charges a percentage of the net revenue they recover.
4. The PFD and City of Portage should establish relationships and share data with local health facilities and hospitals to provide the best possible care.
5. The PFD should continue to analyze data, look for trends, and identify ways to continually improve services.

Conclusion

In the mission statement of the PFD (committed to providing the highest quality of public safety for the community through public education, quality service and emergency preparedness) the core pledge is to recognize, prioritize and provide for the fundamental needs of its citizens. The City of Portage is positioned to choose between the status quo or changing the EMS delivery model, to provide flexibility and the optimization of patient care in the community. Cost effective and efficient delivery of services that fall under local direction, will be realized, if the City capitalizes on the opportunity presented to them. In addition, the ability to use these personnel in a dual role augments the current fire response to make it safer, more effective and efficient. Not only does this information verify that it is feasible, the data confirms the need for the City to provide ambulance transport services to enhance the quality of life within Portage and the surrounding Townships. Data also indicates that a positive cost recovery for services provided does indeed exist, allowing for sustainable economic growth.

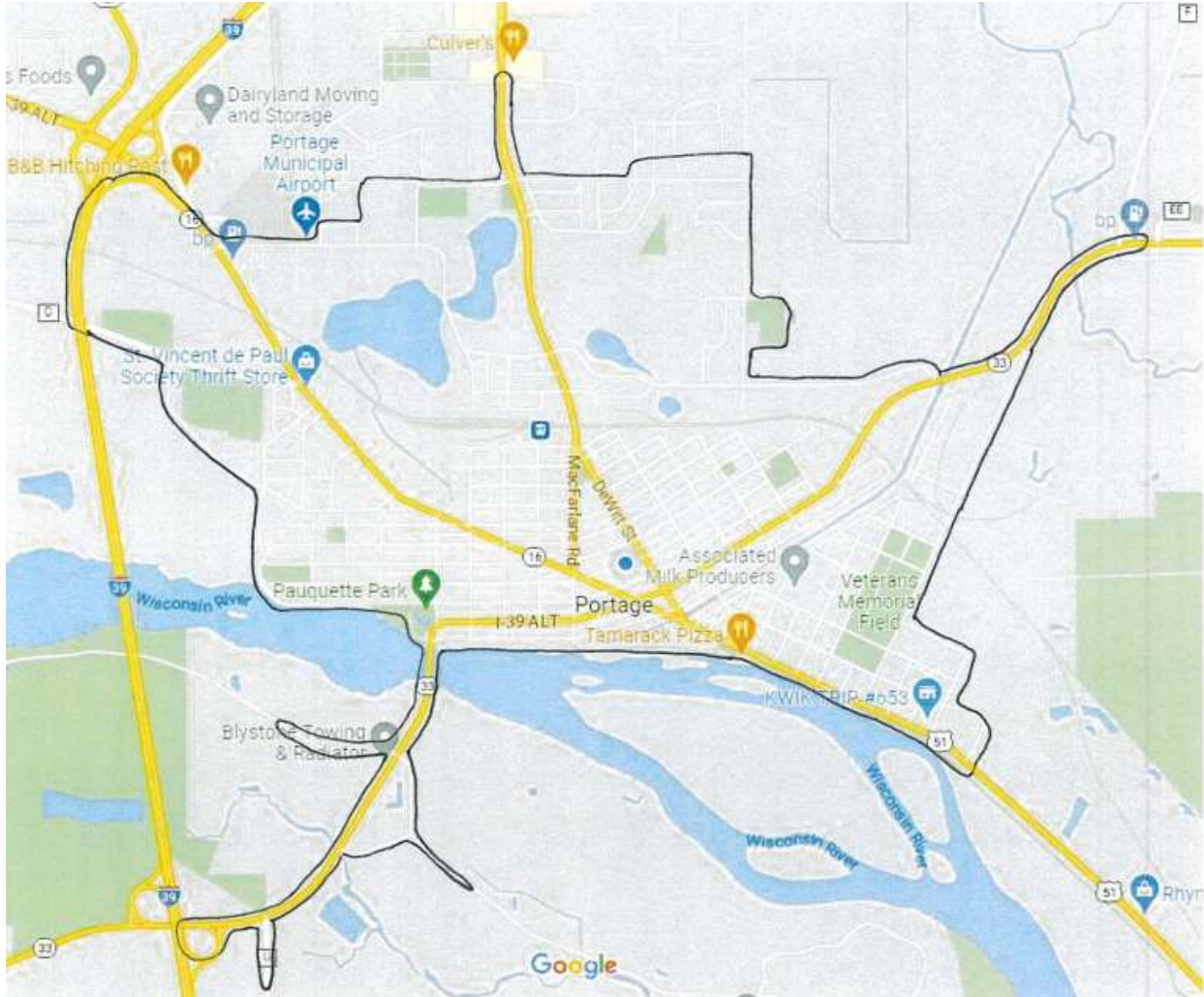
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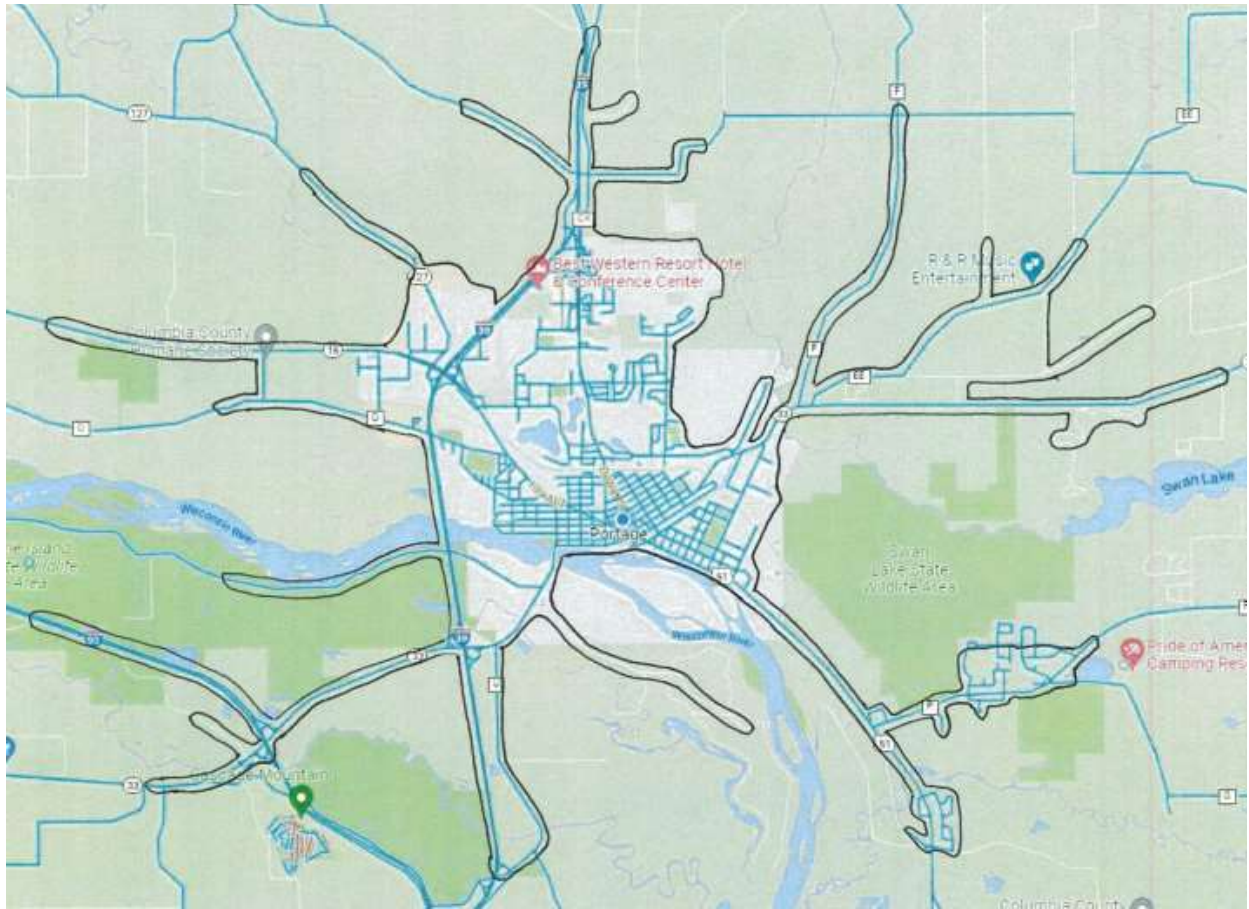
Appendix A

Portage Area EMS Survey						
	Portage Fire - Projected	Aspirus MedEvac	Baraboo EMS	Dells- Delton EMS	Marquette County EMS	Private Service
Average Billable EMS Runs	1996	1910	1965	2400	1548	1400
ALS 1 Fee - Resident	\$1,600.00		\$1,700.00	\$1,149.00	\$1,600.00	\$996.00
ALS 2 Fee - Resident			\$1,700.00	\$1,911.00	\$2,000.00	\$1,648.00
ALS 1 Fee - Non- Resident	\$2,000.00		\$2,100.00	\$1,249.00	\$1,600.00	\$1,241.00
ALS 2 Fee - Non- Resident			\$2,100.00	\$1,986.00	\$2,000.00	\$1,894.00
Flat/Itemized Fee	Flat		Flat	Flat	Flat	Flat
Cost Per Loaded Mile	\$28.00		\$23.00	\$19.00	\$26.00	\$21.00
Revenue	\$1,061,411	\$866,347	\$888,619	\$1,100,000	\$811,270	\$1,069,530
Gross or Net	Net	Net	Net	Net	Net	Net
Staffing						
Assigned	2	X	X	X	X	X
Cross-Staffed	1					
# of Ambulances Staffed	2.5 - 3	1.5 - 2	4	2	3.5	2
Emergency Only	X				X	X
Transfers		X	X	X		
Billing						
In-House		X				X
3rd Party	X		X	X	X	

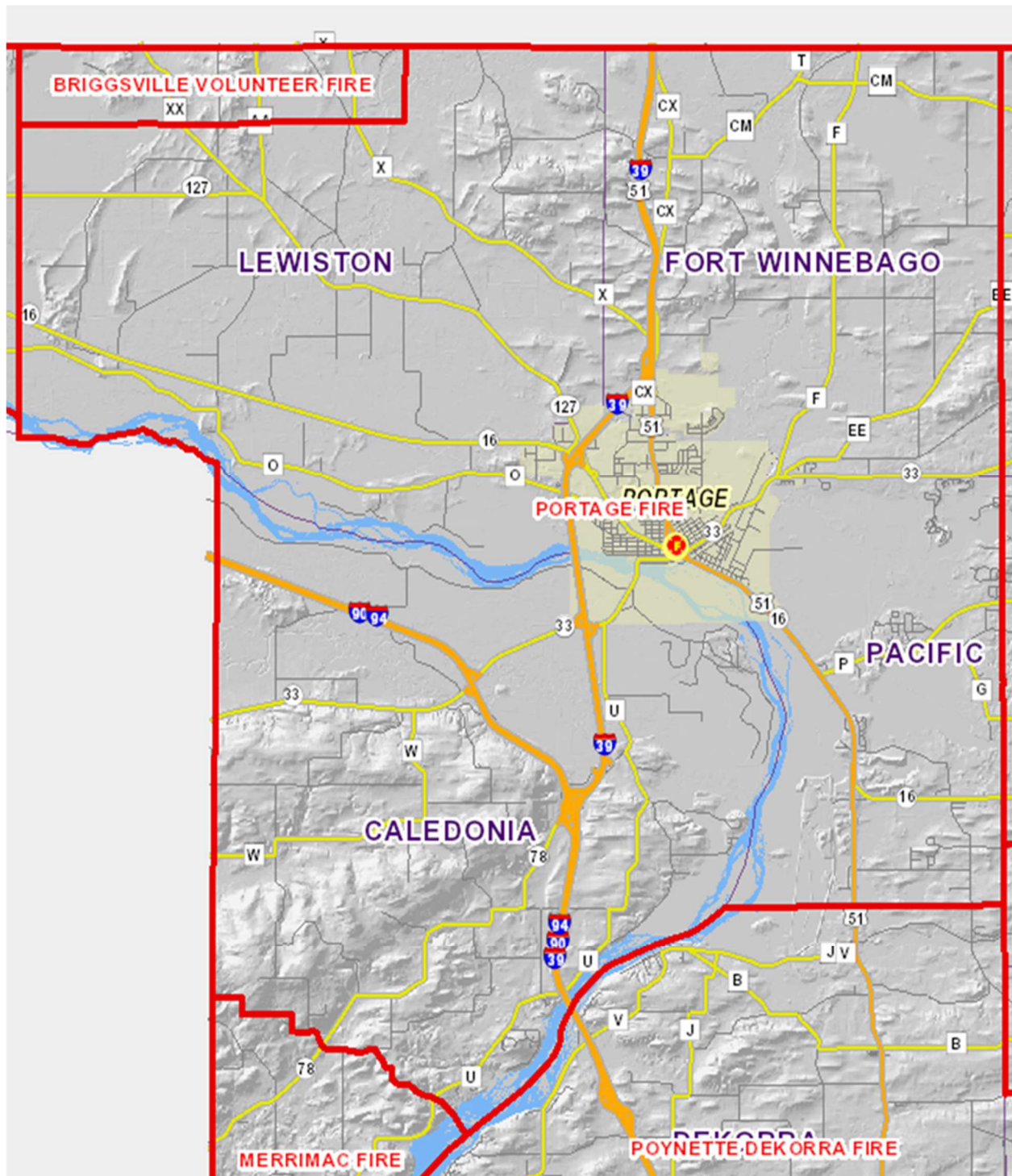
Appendix B
Projected PFD Response
ALS 4 Minute Response



ALS 8 Minute Response



Proposed PFD Response Areas



Portage Fire / EMS Budget			
Account Name	2025 Proposed Revenue	2026 Proposed Revenue	2027 Proposed Revenue
Township Subsidies	\$255,000	\$267,750	\$281,138
GEMT		\$60,000	\$60,000
Current Year Ambulance Revenues	\$630,000	\$900,000	\$1,000,000
	\$885,000	\$1,227,750	\$1,341,138
Account Name	2025 Proposed Expenditures	2026 Proposed Expenditures	2027 Proposed Expenditures
Payroll Expenses	\$1,072,577	\$1,213,133	\$1,267,724
Holiday Pay	\$94,823	\$99,090	\$103,549
Estimated Overtime	\$65,000	\$67,925	\$70,982
Compensatory Time	\$34,522	\$36,075	\$37,698
Special Team Reimbursement	\$10,192	\$10,192	\$10,192
Uniform Allowance*	\$28,000	\$7,700	\$7,700
Social Security (1.45%)	\$18,518	\$20,683	\$21,607
Retirement (20%)	\$255,422	\$285,283	\$298,029
Health Insurance	\$335,118	\$361,927	\$390,882
Life Insurance	\$4,000	\$4,180	\$4,368
Dental Plan	\$6,720	\$7,022	\$7,338
Workers Comp Insurance	\$65,230	\$71,973	\$74,949
General Liability & Professional	\$2,500	\$2,500	\$2,500
Annual Physicals*	\$20,000	\$10,000	\$10,000
Training	\$15,000	\$15,000	\$15,000
EMT/Paramedic Certification	\$25,000	\$25,000	\$25,000
Travel Expenses	\$3,500	\$3,500	\$3,500
Prof Fees - Medical Director	\$25,000	\$26,125	\$27,300
Billing Management Fee	\$32,500	\$45,000	\$45,000
Vehicle & Equipment Insurance	\$9,000	\$9,360	\$9,736
Medical Supplies*	\$137,500	\$84,975	\$88,374
Auto Expense - Fuel	\$30,600	\$31,977	\$33,416
Auto Expense - Vehicle Repairs	\$7,000	\$7,350	\$7,718
Operating Supplies - Oxygen	\$6,800	\$7,140	\$7,497
Small Equipment*	\$7,000	\$5,000	\$5,000
Equipment Repairs/Maintenance	\$2,000	\$5,000	\$5,000
Building Repairs	\$2,000	\$5,000	\$5,000
IT Support/RSA*	\$18,950	\$4,000	\$4,000
FireWorks/CAD*	\$21,300	\$6,500	\$6,500
Prof Fees - Legal Fees	\$2,500	\$2,500	\$2,500
Telephone	\$4,500	\$4,725	\$4,961
Subscriptions	\$1,000	\$1,000	\$1,000
Office Supplies	\$1,000	\$1,000	\$1,000
Computer Expense	\$2,500	\$1,500	\$1,500
Total Annual Expenditures	\$2,367,272	\$2,489,335	\$2,606,520
Revenue	\$885,000	\$1,227,750	\$1,341,138
Total Tax Levy	-\$1,482,272	-\$1,261,585	-\$1,265,382